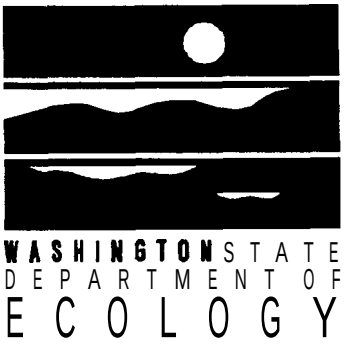

How to Create a Water Conservation Issue Paper

A Guide for Ground Water Advisory Committees and Ground Water Management Area Lead Agencies

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November 1991
91-67

Introduction

Water conservation is an important part of a Ground Water Management Plan. Conserving water means using water more efficiently without "doing without." Water conservation is a tool to reduce water waste that can be applied to all types of water use. There are a variety of methods to conserve water, from water saving technologies to habit changes, to include in a water conservation plan. And each of these technologies or habit changes can be implemented in a variety of ways. The object of the water conservation element in the Ground Water Management Plan is to choose the conservation methods that best suit the ground water users in the management area.

RCW 90.44.410 requires the inclusion of a water conservation element in the Ground Water Management Plan but does not describe what this element should include. Ground water management planning was designed to be flexible to allow the creation of an individual, local program. Ground water management plans are the result of research, discussion, and recommendations. Issue papers present the research on water conservation to be discussed by the Ground Water Advisory Committee, who in turn, create the conservation element based on the recommendations presented in the issue paper and group discussions. Using this guideline will support the development of a conservation program that meets the intent of RCW 90.444.410(2)(1).

Unlike some other elements of the Ground Water Management Plan, water conservation planning is currently required of individual public water systems. This means that the writer(s) of a water conservation issue paper faces the challenge of integrating existing planning activities with new ideas that fit the needs of the Ground Water Management Area. This handout is designed to help with the creation of the conservation issue paper by describing the development of an issue paper and the specific considerations that a water conservation issue paper should include. The individual water conservation elements will differ, depending upon the needs and characteristics of each Ground Water Management Area.

This handout is divided into purpose and preparation sections. The purpose section explains why water conservation is important and the preparation section details the development of an issue paper and a conservation element.

Purpose

Why should a Ground Water Management Plan include water conservation?

1. Conservation reduces the rate of ground water withdrawal which could bring demand in line with the amount of water that can be sustainably withdrawn from the aquifer. Reducing the rate of withdrawal is especially important for sole source aquifers or in areas where other water supplies are prohibitively expensive.

2. Conservation reduces the rate of contamination of an aquifer by seawater. Slowing the rate of withdrawal slows down the rate of intrusion. Conservation will also stretch safe water supplies when contamination has rendered other regular supplies unusable.

3. Conservation will reduce the amount of wastewater generated. Wastewater can be a contaminant of ground water. Reduction of wastewater can limit the threat of contamination.

4. Conservation is usually cheaper than developing other sources of water. Conservation also results in fewer detrimental effects to the environment than the development of new supplies.

5. A Ground Water Management Plan can get information to a broader group of water users. Conservation plans are required of public water systems that serve municipal water users. But this is not enough to get water conservation information to all ground water users in a Ground Water Management Area. Ground Water Management Plans have the opportunity to influence the water use habits of single-family well users and small residential systems, industry, and commercial water users who have their own sources of ground water. Because Ground Water Management Plans take a comprehensive approach to managing ground water and all that influences its quality and quantity, voluntary and mandatory water conservation activities can be designed for all water users, not just those users who purchase water from a system. Ground Water Management Plans also have the opportunity to coordinate with existing water conservation planning processes in order to create a regional water conservation program that provides services to water users that the individual water systems can not.

Preparation

The following describes information that will contribute to a water conservation issue paper. The description of an issue paper follows.

Background

The development of the water conservation element of the Ground Water Management Plan begins with the basic background research required for the development of the plan. This information is described in WAC 173-100-100. This information helps define problems which can be altered by water conservation and helps determine the level of implementation. For example, if contamination threatens a ground water supply, conservation will need to be pursued with greater urgency and the implementation of mandatory water conservation activities, as opposed to voluntary activities, may be necessary.

Data Collection

In addition to the background material, the issue paper should present a profile of ground water use in the management area. This profile should include the number and type of ground water users, the amount of water these users use on an average and the maximum amount they use at any one time. This profile helps identify the target audience for water conservation activities. Activities can be tailored to each water user group and to each period of water use. Information for the profile should be available from the county (building permits, population data) and from the water systems in the area (billing data, planning documents).

For example, if the profile reveals that single family well owners are the biggest ground water users, and their water use rises in the summer, then a program of encouraging the reduction of residential summer time watering should be pursued. Since approximately 40% of residential water use in the summer is for the maintenance of residential landscaping, activities such as educating the public about low water use landscape design should be pursued.

Descriptions of water conservation activities can be found in a variety of documents, including the *Water Conservation Planning Handbook* available from the Department of Ecology's Water Resources Program, *(206) 459-6787,* and the *Water Conservation Alternatives Inventory,* Arizona Department of Water Resources, Tucson Active Management Area, 310 South Meyer Avenue, Tucson AZ 85701, (602) 628-5858.

Data to Collect

Adequacy of Supply

Determining the adequacy of the ground water supply to meet demand is difficult due to several "unknowns" about aquifers. While a total quantity may be available for a given use, the rate at which that water is withdrawn may impact the source.

The other aspect of determining adequacy of supply is determining the amount of water demanded from that source. While the amount needed to suit any given use can vary, the state Department of Health has minimum design standards for municipal water systems that should be used when anticipating new demand.

Potential to Conserve

The potential to conserve again depends on a number of variables. Some conservation activities have been monitored in different areas for a number of years which allows for acceptable estimations of savings. Other measures are much harder to quantify, such as how much saved water is attributable to education.

When calculating the potential conservation savings, in addition to an estimate of the amount of savings from each measure (example: a toilet tank displacement bag saves a quart of water per flush), it is important to figure the number of people who will participate in the conservation measure, how often they participate in this type of water use activity and the estimated number of people who will stop participating in the activity over time. As a rule of thumb, estimates of savings should be conservative in order to avoid dependance on an amount of water that may not materialize.

Regulation/Implementation

The next step in defining how water conservation can be used in the Ground Water Management Plan is to profile the means of implementing water conservation within the ground water management area. The profile includes descriptions of the regulatory bodies and information centers within the ground water management area and how these entities can be used to implement water conservation. For example, a county planning department could create a landscape ordinance that requires the use of low water use landscaping principles and the local community college could offer seminars or workshops on how to design and install a low water use landscape.

Enforcement

In addition to identifying who the regulatory bodies are in the Ground Water Management Area and what implementation powers those entities have, it is important to also define each entity's enforcement powers. Some methods of water conservation may be very desirable but not enforceable, such as fixing leaks in household plumbing fixtures. While this is an effective and low cost way to save water, it is not reasonable to try to enforce the fixing of leaks. Instead, educate on the importance of fixing leaks, with an emphasis on the economic and environmental costs of wasting water to serve as an incentive for action.

Use of Land-Use Controls

Ground Water Management Area plans, because of the wide area they cover, can influence land use decisions at the city and county level. Ordinances to control the development of land may be helpful in reducing future water demand. Grading ordinances can be used to assure the proper preparation of the site of new development. An improperly graded site can lead to excessive landscape water use and improper functioning of septic systems.

Other types of ordinances to explore are housing density ordinances, restrictions on lawn size and other landscaping ordinances, such as requiring the retention of native plants or requiring the use of efficient irrigation systems.

Coordination

The issue paper should recognize and summarize any existing water conservation planning activities within the Ground Water Management Area. Public water systems will be required by the Department of Health and the Department of Ecology to create water conservation plans that meet minimum requirements described in the document *Interim Guidelines for Public Water Systems Regarding Water Use Reporting, Demand Forecasting Methodology, and Conservation Programs.*

In addition to individual water system conservation plans, in areas of critical water supply, Coordinated Water System Plans (CWSPs) are developed. CWSPs include a water conservation element which identifies water conservation activities that will be implemented at a regional level, as opposed to the local water system level. The Ground Water Advisory Committee should include water system representatives who can explain the contents of the CWSP conservation element and who can facilitate coordination between the conservation element of the Ground Water Management Plan and the CWSP. Coordination between the water conservation element of the Ground Water Management Plan and the individual water system conservation plans is also necessary, especially if the individual water systems are not coordinated through a CWSP.

Regardless of whether they have a water conservation plan in place or not, all public water systems should be included in the development of a conservation element. The public water system has a direct link with the water user through rates and bills that can be used to encourage water conservation.

Use of Conserved Water

Water right holders in some parts of the state will soon be able to enter into an agreement with the state to put some part of water saved due to conservation into a water right held in trust by the state for maintaining instream flows (ESHB 2026). These agreements may impact how conserved water is allocated in the Ground Water Management Area.

Other than the agreement described above, conserved water still belongs to the entity with the water right for that water, unless that portion of the right is relinquished. Thus, in most cases, that water is either used to support more of the original activity or a different activity(in both cases, a change in the water right would need to be approved by Ecology). If a municipality saves water through conservation, it is likely that the saved water will be used to supply more municipal customers or will be stored for future use. If the goal of the Ground Water Management Program is to permanently reduce withdrawals from the aquifer, water right holders would have to agree to relinquish part of their existing rights and no new rights could be issued. Such an agreement would have to be negotiated with the Department of Ecology.

Summary

The following outline represents the development of an issue paper and how that issue paper forms the basis of the water conservation element of the Ground Water Management Plan. The water conservation element should include an implementation plan with responsibilities for implementation clearly stated.

I. Rationalization

- A. Creation of a Statement of Purpose — Why water conservation is particularly needed in this Ground Water Management Area.
- B. Gathering of background data on the area
- C. Identification of regulatory entities
- D. Identification of methods of implementation
- E. Identification of enforcement capabilities
- F. Examination of land-use controls
- G. Coordination with other planning processes and activities
- H. Use of Conserved Water

II. Summary of existing water conservation programs and capabilities

III. Discussion of new water conservation programs (based on group discussion)

IV Development of a recommended water conservation program — must be agreed to by the affected entities

- A. Identify individual entity's responsibilities
- B. Outline the implementation schedule
- C. Describe the costs and benefits of program

V. Adoption of water conservation element for inclusion in the Ground Water Management Plan

Use the outline above as a checklist to guide the process from issue paper to plan.

Water conservation is a dynamic concept. The Department of Ecology would Iike to know how it can assist Ground Water Management Areas, local government and all water users in conserving water. Comments and questions are always welcome. Ground Water Advisory Committees can be especially helpful by pointing out where the state needs to take action to remove barriers to the implementation of water conservation activities.

Please contact, Tiffany Yelton or Jerry Parker at the Department of Ecology's Water Resources Program, Mail Stop PV-11, Olympia WA 98504, if you have questions or comments on water conservation.